

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1, 2, 5-7, 9-12, 14-18, 22, and 24-26 are pending in the present application. Claims 1, 5, 6, 16-18, 22, 24, and 25 are amended, and support for the amendments is found in the Applicants' specification at least, for example at page 8, line 15 to page 9, line 28. Claims 3 and 4 are canceled. It is respectfully submitted that no new matter is added by this amendment.

In the outstanding Office Action, Claims 1, 2-4, 7, 9, 10, 14-18, and 22, and 26 were rejected under 35 U.S.C. §102(b) as anticipated by Umemoto et al. (U.S. Patent No. 5,636,323, herein "Umemoto"); Claims 5 and 6 were rejected under 35 U.S.C. §103(a) as unpatentable over Umemoto and further in view of Lassaux et al. (U.S. Patent No. 4,679,230, herein "Lassaux"); and Claims 11, 12, 24, and 25 were rejected under 35 U.S.C. §103(a) as unpatentable over Umemoto and further in view of Sih (U.S. Patent No. 5,732,134).

Applicants thank Examiner Jamal for the interview granted Applicants' representatives on May 3, 2005. During the interview, how the claimed invention differed from the cited references of record, how the claims may be drafted to overcome the outstanding rejections, and proposed amendments to Claims 1 and 16 were discussed. More specifically, claim amendments were discussed that further define the operation of the echo processing unit and the use of the speaker amplification value. Examiner Jamal indicated that amendments further defining the operation of the echo processing unit and the use of the speaker amplification value would require further search and consideration, and therefore the claim amendments should be filed concurrently with a Request for Continued Examination (RCE).

In response to the rejection of Claims 1, 2-4, 7, 9, 10, 14-18, 22, and 26 under 35 U.S.C. §102(b), Claims 1 and 16 were amended to point out the use of a degree of change of the speaker amplification. Claims 3 and 4 are canceled. Claims 5, 6, 17, 18, 22, 24, 25 are dependent claims that were amended to comply with the form of their respective independent Claims 1 and 16.

Briefly recapitulating, the invention improves echo canceling performance by using the degree of change of the speaker amplification value to change the filter coefficient in stages. This converges the filter coefficient faster. To this end, amended Claim 1 recites a voice communication device including in part, an echo processing unit with echo canceling means for changing a filter coefficient, which is calculated according to an acoustic transmission characteristic between the microphone and the speaker, according to a **degree of change** of the speaker amplification value, calculating a pseudo echo from both the receive input signal and the filter coefficient, and removing the echo from the transmitting input signal including the echo by using the pseudo echo, wherein the filter coefficient is changed stage by stage by the echo canceling means in a case where the degree of change of the speaker amplification value is larger than a prescribed degree of change.

As described in the non-limiting example of the Applicants' specification at page 8, line 15 to page 19, line 1, the echo canceling means is affected according to a **degree of change** of the speaker amplification. Claim 16 is amended to recite similar features to those discussed above with respect to amended Claim 1.

Umemoto describes a speech communicating apparatus with an echo canceller 30, wherein the echo canceller 30 is provided with a volume control 36 and amplitude limiter 35.<sup>1</sup> Umemoto only explains a general operation of the echo canceller that when the speaker amplification value exceeds a predetermined value, the received signal amplified is input to

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<sup>1</sup> Umemoto, Abstract and Figures 2, 5, and 8.

the echo canceller and the echo canceller updates the adaptive filter coefficient as normal operation<sup>2</sup> Therefore, the “decrease/increase in amplitude limit level is performed ... in association with an increase/decrease of a volume of the amplitude limiting means”.<sup>3</sup> In other words, there is only an associated increase/decrease.

The speech communicating apparatus of Umemoto does not disclose “changing a filter coefficient ... according to a **degree of change** ... wherein said filter coefficient is changed stage by stage”. Therefore, Umemoto does not teach each and every element of amended Claims 1 or 16, and it is respectfully submitted that amended Claims 1 and 16 are not anticipated by Umemoto. Accordingly, it is respectfully submitted that amended Claims 1 and Claim 16 and respective dependent Claims 2, 5, 6, 7, 9, 10, 11-15, 17, 18, 22, and 24-26 patentably distinguish over Umemoto. It is therefore respectfully requested that this rejection be withdrawn.

In response to the rejection of Claims 5 and 6 under 35 U.S.C. § 103(a) as being unpatentable over Umemoto in view of Lassaux, for the reasons discussed above, Claim 1 is believed to be allowable. Further it is respectfully submitted that Lassaux fails to cure the deficiencies identified above with respect to Umemoto. Accordingly, the outstanding rejection of Claims 5 and 6 is also respectfully traversed, and it is respectfully requested that the rejection of Claims 5 and 6 under 35 U.S.C. § 103(a) be withdrawn.

In response to the rejection of Claims 11, 12, 24, and 25 under 35 U.S.C. § 103(a) as being unpatentable over Umemoto in view of Sih, for the reasons discussed above, Claims 1 and 16 are believed to be allowable. Further it is respectfully submitted that Sih fails to cure the deficiencies identified above with respect to Umemoto. Accordingly, the outstanding rejection of Claims 11, 12, 24, and 25 is also respectfully traversed, and it is respectfully

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<sup>2</sup> Umemoto, column 2, lines 35-55.

<sup>3</sup> *Id.*

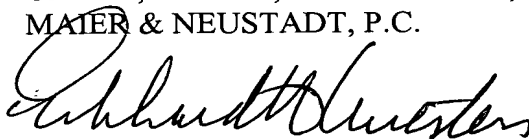
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requested that the rejection of Claims 11, 12, 24, and 25 under 35 U.S.C. § 103(a) be withdrawn.

Consequently, in view of the present amendment and in light of the above discussion, the application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.



Eckhard H. Kuesters  
Attorney of Record  
Registration No. 28,870

Customer Number  
**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)

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